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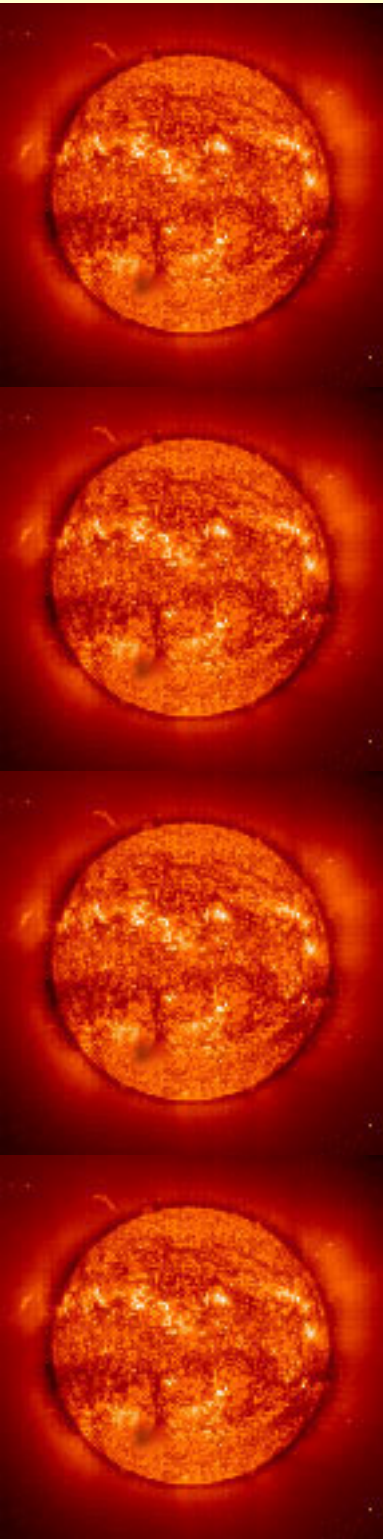
**Personal Reflections on Solar Power**

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By my calculations, on May 16, 2000, with the summer solstice fast approaching, the sun should have been directly overhead at noon roughly somewhere near where I stood in south Goa. The linked photograph shows the author's wife, Kami Pothukuchi, on the beach in Goa, approximately 74 degrees east longitude, 15 degrees north latitude. Consider the pattern of shadow in that photograph. Prior to this past May, I had never experienced the sun directly overhead, nor had I traveled to India, my wife's home country. Thus, during my stay in India, I could not help but contemplate the sun and its byproducts and how they affected life in India.

Appropriately, the sun and its effects played a central role in our trip. Even before our departure from Ann Arbor, my wife and I regularly checked the weather reports for Mumbai and Chennai in order to gauge just how hot it might be there during our stay. We arrived in Mumbai around midnight on May 7, but the heat and humidity still were intense, especially with the monsoons only about one month off. From then on, every day required consideration of the sun and the deleterious effects it might have on my pale skin: dressing properly, finding shade, applying sunscreen, obtaining safe drinking water, and timing trips to avoid the worst heat of the day, if at all possible. (Linked photo shows the author, looking weary of the sun, in Mumbai. The street is not named for the





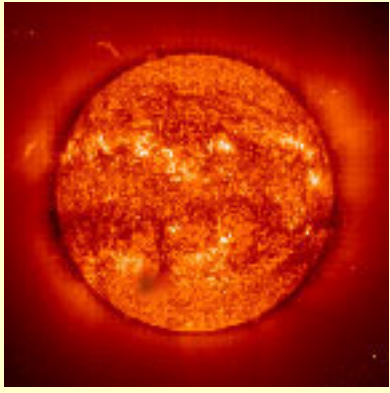
author.)

Indirect products of the sun, too, were much in evidence during this trip. Fossil-fuel powered vehicles (note traffic in linked photo) are becoming increasingly common in India, for example, and they have begun to cause severe pollution effects. Even in the hill station resort of Ooty, surrounded by tea plantations, diesel exhaust proved omnipresent. Like Mexico City, Ooty is nestled in a mountain valley. Therefore, the exhaust produced by the countless tour buses, motor scooters, and power boats that ply the narrow mountain roads and mountain lakes settles in and stays the night, just like the tourists. Indeed, by my nasal meter, air quality in Ooty was worse than what we encountered in Mumbai.

Plastics, too, the polymerized end-products of eons of photosynthetic activity, have found their way into the Indian environment. Everywhere we went plastic bags and bottles littered the countryside. Apparently, the Indian system of creative reuse and recycling of all waste products has yet to devise a system for keeping up with the supply of discarded plastic.

Let's not forget about the rain. The monsoons, terrific storms powered by the intense summer sun heating the land far in excess of the sea, were due shortly after our scheduled departure for the U.S. As luck would have it, however, our return to Mumbai from greeting the sun in Goa was met with the worst pre-monsoon rains in 50 years—rains so intense that they shut-down the trains and buses and even dislodged a seemingly endless series of stories dedicated to gambling scandals in cricket and the Miss Universe Pageant (an Indian won yet again—could the sun have played a role here, too?) from the front page of *The Times of India*.

Today (summer solstice, June 21, 2000), the sun begins heading south again, headed toward the Tropic of Capricorn for about the ten billionth time. As it does so, it will pass over much of a nation that is increasingly a leader in high technology, albeit while still having most of its one



**billion people mired in deep poverty. Now that I am back in the US, avoiding use of my car and recycling all of my plastic, I am hopeful that India will devote some of its newfound high-tech expertise toward improved use of our shared solar resources. Perhaps, for example, an Indian engineer will develop a solar-powered car, or at least one that runs cleanly off all those empty plastic water bottles that I left behind.**

Source of solar image: [http://umbra.gsfc.nasa.gov/eit/eit\\_full\\_res.html](http://umbra.gsfc.nasa.gov/eit/eit_full_res.html)

Source of sand image: cropped from the author's photograph of a beach in southern Goa.









